CLAIMS

What is claimed is:

1. An optical disc drive for a disc, comprising:

a main body;

a spindle motor attached to the main body;

a tray attached to the main body so as to be loadable/unloadable into/from the main body; and

a disc holder rotatable by the spindle motor when the tray is in a loaded position, and joinable to a clamping hole of the disc so as to fix the disc.

2. The optical disc drive according to claim 1, wherein the optical disc drive further comprises:

a rotatable shaft installed through the tray with the disc holder joinable to one end of the rotatable shaft ; and

a first gear joinable to the other end of the rotatable shaft,

wherein the spindle motor has a second gear connectable to the first gear.

3. The optical disc drive according to claim 1, wherein the spindle motor is installed to be movable in an upward and downward direction with respect to the disc holder.

4. The optical disc drive according to claim 3, further comprising a first coupler joinable to the disc holder, and a second coupler is provided on the rotatable shaft of the spindle motor to be connectable to the first coupler in a male-female manner as the spindle motor moves upward.

5. The optical disc drive according to claim 4, wherein the first coupler and the second coupler are magnetically attachable to each other.

6. The optical disc drive according to claim 3, wherein the optical disc drive further comprises:

a first rotatable shaft installed through the tray with the disc holder joinable to one end of the first rotatable shaft ; and

a first coupler joinable to the other end of the first rotatable shaft, and a second coupler provided at a second rotatable shaft of the spindle motor to be connectable to the first coupler in a male-female manner as the spindle motor moves upward.

7. The optical disc drive according to claim 6, wherein the second coupler is installed to be elastically movable along the length of the second rotatable shaft of the spindle motor.

8. The optical disc drive according to claim 3, wherein the disc holder is connectable to the spindle motor by a magnetic force therebetween, to be rotated by the spindle motor.

9. The optical disc drive according to claim 8, wherein a magnet is joined to the second rotatable shaft of the spindle motor, and at least a portion of the disc holder is formed with a material magnetically attachable to the magnet.

10. The optical disc drive according to claim 8, wherein at least a portion of the disc holder is formed with a magnet, and a member made of a material magnetically attachable to the magnet is joined to the second rotatable shaft of the spindle motor.

11. The optical disc drive according to claim 8, wherein the disc holder comprises an engagement portion recessed inwardly at a side surface of the disc holder, and the tray comprises:

a guiding portion having an opening formed at a side thereof, and

elastic arms at the opening, to prevent the disc holder from escaping from the guiding portion through the opening,

wherein the engagement portion is engageable with the guiding portion, and the disc holder is insertable into the guiding portion through the opening.

12. The optical disc drive according to claim 11, wherein an insertion hole is provided in the disc holder, and the second rotatable shaft of the spindle motor is insertable into the insertion hole.

13. The optical disc drive according to claim 8, wherein the tray comprises a circular opening, and the disc holder comprises a first member and a second member vertically joinable to each other to form an engagement groove that is engageable with the circular opening,

wherein the first member and the second member are joinable to each other from a top side and a bottom side of the tray through the opening, to install the disc holder on the tray to be rotated.

14. The optical disc drive according to claim 13, wherein an insertion hole is formed at the second member so that the rotatable shaft of the spindle motor is insertable into the insertion hole.

15. An optical disc drive for a disc, comprising:

a tray with a circular through opening;

a spindle motor; and

a disc holder joined to the opening, and magnetically joined to the spindle motor and rotated by the spindle motor when the tray is loaded, wherein the disc holder comprises:

a first member and a second member, and

a fixing member having hooks elastically joinable to the clamping hole of the disc so as to fix the disc to the disc holder.

16. The optical disc drive according to claim 15, wherein the first member is a ring-shaped member having an outer ring and an inner ring, and a plurality of projections are projected toward the inner side of the inner ring.

17. The optical disc drive according to claim 16, wherein the second member has a cylindrical portion around which the inner ring is fitted, and a wing portion the diameter of which is greater than that of the cylindrical portion.

18. The optical disc drive according to claim 17, wherein the cylindrical portion has a plurality of recessed portions recessed from the outer circumference thereof, and a snap projection to make a snap-fit engagement with the projection is provided at the recessed portions.

19 The optical disc drive according to claim 15, wherein a lower portion of the second member has an insertion hole into which a rotatable shaft of a spindle motor is insertable.

20. The optical disc drive according to claim 17, wherein an outer diameter of the inner ring is slightly smaller than a diameter of the opening, an outer diameter of the outer ring and the wing portion is slightly greater than the diameter of the opening, and a distance between the outer ring and the wing portion is slightly greater than a depth of the opening.

21. The optical disc drive according to claim 15, wherein the first member and the second member are insertable into the opening from the upper side and the lower side of the tray, respectively.

22. The optical disc drive according to claim 18, wherein the inner ring is fittable around the cylindrical portion, and when the projection and the snap projection are snap-fit engaged, the first and second members are joined to each other.

23. The optical disc drive according to claim 15, wherein the fixing member is joined to a boss projecting from the second member.

24. The optical disc drive according to claim 15, wherein at least one of the first member and the second member is formed with a material that is magnetically attached to a magnet.

25. An optical disc drive for a disc, comprising:

a tray with a circular through opening;

a spindle motor; and

a disc holder joined to the opening, and magnetically joined to the spindle motor and rotated by the spindle motor when the tray is loaded, wherein the disc holder comprises:

a first member and a second member joinable to each other to form an engagement groove which is movably joinable to the circular through opening, and

a fixing member having a plurality of elastically deformable arms with hooks to hook edge portions of the disc.

26. The optical disc drive according to claim 25, wherein after the fixing member is seated on the second member, the first member is snap-fit.

27. The optical disc drive according to claim 25, wherein when the disc is fitted to the fixing member, the arms are elastically deformed inward.

28. The optical disc drive according to claim 27, wherein when the disc is seated on a friction member, the arms return to original positions, and the hooks hook edge portions of the clamping hole, to fix the disc to the disc holder.